



The Ridge

Suitable Alternative Natural Greenspace (SANG)

Revised SANG Creation & Management Plan

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Revised SANG Creation & Management Plan

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The Ridge SANG

Revised SANG Creation & Management Plan

1. INTRODUCTION

Introduction

- 1.1 This document sets out proposals to create and manage 'Suitable Alternative Natural Greenspace' (SANG) (referred to in this report as the Ridge SANG) consented by Wokingham Borough Council (WBC) as part of the Shinfield West outline planning application (reference O/2010/1432 and VAR/2014/0624), reserved matters application 171151 and the Spencers Wood hybrid application O/2013/0346.
- 1.2 The proposed Shinfield West development lies around five kilometres from the Thames Basin Heaths Special Protection Area (TBH SPA), and therefore, under saved Policy NRM6 of the South East Plan Regional Spatial Strategy (RSS) and Policy CP8 of Wokingham Borough Council's adopted Core Strategy, requires the provision of SANG. The full rationale behind the need for SANG and the scale of necessary provision to accommodate proposed development is set out in the Shinfield West Thames Basin Heaths SPA Impact Avoidance and Mitigation Strategy (EPR, 2010), and is not repeated here.
- 1.3 The Ridge SANG is a component part of a suite of SANG areas, and other green infrastructure, that is in the process of being delivered across the South of the M4 Strategic Development Location (SDL) to address the potential increases in recreational pressure that might otherwise be exerted upon the TBH SPA. This overarching SANG strategy is set out in the South of the M4 SDL and Land at the Manor Thames Basin Heaths SPA Impact Avoidance and Mitigation Strategy (EPR 2010b and 2012) that has been submitted to the Council in conjunction with other development reliant upon the SANG, and it is intended that each application coming forward within this context will provide a proportionate part of the overall SANG suite that is sufficient to address the potential impacts of that application. In this way, SANG area can be delivered in a phased manner towards the overall vision for a coherent suite of semi-natural green open spaces that relate well to development across the SDL, and to each other.
- 1.4 The Shinfield West planning consent is for residential development comprising up to 1,200 dwellings, a further 150 units of sheltered housing, a local centre which will include a food store (2,500sqm) and other retail and office uses, a community building, a primary school, proposed extension of existing primary schools, public open space, sports pavilion, SANG, access and landscaping. In respect of the SANG, the outline application sought permission for change of use from agricultural land to informal recreation (Sui Generis use including conservation livestock grazing) and associated development including pedestrian and vehicular access, car park, footpath network and landscaping.
- 1.5 The Ridge SANG will contribute to the recreational resource available to the residents of the proposed South of M4 SDL.

- 1.6 An Outline SANG Creation and Management Plan for the Ridge SANG (EPR, 2010) was submitted with the Outline application for Shinfield West. Work on creating the SANG has already begun, with the first part of the SANG (including the car park) already created and made available to the public. A ridge-raising exercise has also been carried out under Reserved Matters Consent 171151, although this area is not yet open to the public.
- 1.7 Condition 73 of the Outline consent requires the 2010 SANG Creation and Management Plan to be revised and submitted to the Council prior to a trigger point related to the occupation of new dwellings at Shinfield West, albeit that any revisions must be in accordance with the principles that were originally established and agreed in conjunction with the original Shinfield West Outline Consent.
- 1.8 This Revised SANG Creation and Management Plan has therefore been produced to enable Condition 73 of the Outline Consent to be discharged. This is explained in greater detail in **Section 2** below.

Location of the Ridge SANG

- 1.9 The Ridge SANG is located south of Church Lane and east of Hyde End Road between Three Mile Cross and Shinfield. The area and extent of the SANG, along with adjacent or nearby areas of nature conservation interest are shown on **Map 1**. The setting of the SANG in the wider landscape in relation to the Thames Basin Heaths SPA and to its connections with Shinfield West and the wider SDL proposals are shown on **Map 2**.

Revised SANG Creation & Management Plan

- 1.10 Building upon the Outline SANG Creation & Management Plan (2010), this document sets out:
- The planning background setting out the need for SANG as part of the Shinfield West development (**Section 2**);
 - The overarching aims of the Ridge SANG (**Section 3**);
 - The parameters and design principles for the Ridge SANG that will ensure the delivery of a SANG area that functions as intended in drawing recreational pressure away from the Thames Basin Heaths SPA (**Section 4**);
 - A description of the existing physical and biological features, landscape history and existing land use in the SANG area (**Section 5**);
 - The proposed habitats and their management (**Section 6**);
 - The design of the facilities to attract and enable public use (**Section 7**); and
 - An overview of the capital works needed and the means by which management will be secured for the life of the developments that require the SANG (**Section 8**).

2. PLANNING BACKGROUND TO THE RIDGE SANG

Introduction

- 2.1 The Shinfield West outline planning proposals form one component of the delivery of the South of M4 Strategic Development Location (SDL), which is allocated in Wokingham Borough Council's Core Strategy, and envisages the provision of around 2,500 dwellings, a Local Centre, schools and other infrastructure to form a coherent series of new settlement extensions at Shinfield, Spencer's Wood and Three Mile Cross. The Shinfield West development proposals form part of the SDL.
- 2.2 Provision of SANG is needed as part of the Shinfield West planning proposals because of its proximity to the Thames Basin Heaths SPA. In meeting this need, a system of linked SANGs has been developed in association with the Shinfield West development and the policy basis for underpinning it is fully set out in the Design and Access Statement (DAS) and Planning Statement accompanying the Shinfield West planning application. The justification for the Ridge SANG, including its proposed location and size, is set out in the Shinfield West Thames Basin Heaths SPA Impact Avoidance and Mitigation Strategy (EPR 2010b and 2012), which accompanied the Shinfield West outline planning application, and summarised in the Shinfield West DAS and is not repeated in this Management Plan.

Rationale for Providing SANG

- 2.3 Extensive research on the ecology of the species of ground-nesting birds for which the Thames Basin Heaths SPA has been designated, i.e. Nightjar, Dartford Warbler and Woodlark, has suggested that the conservation status of these species is likely to be adversely affected by increases in disturbance arising from increases in human activity, for example dog-walking and other recreational use, on those heaths. The EU Habitats Directive, and the consequent UK Habitats Regulations, requires any such potential effects from new development to be addressed so that they will not contribute towards any adverse effect on the SPA with regard to the species for which it was designated.
- 2.4 In order to allow residential development projects around the SPA to proceed without adverse effects on the SPA, Natural England prepared a Draft Delivery Plan setting out the criteria for SANG, and the circumstances in which this alternative recreation space would be required. The provision of SANG is also subject to recommendations made by the Thames Basin Heaths Joint Strategic Partnership Board (JSPB) in their Thames Basin Heaths SPA Delivery Framework, which was endorsed in February 2009 and sets out guidance for affected local authorities to follow in securing protection of the SPA through planning policy.
- 2.5 Broadly, any development within a zone between 400m and 5km from the edge of any component SSSI within the Thames Basin Heaths SPA, and for certain developments up to 7km from the SPA, is expected to provide impact avoidance measures such as SANG to address any impact upon the SPA.

The Strategy to Avoid Impacts on the Thames Basin Heaths SPA

Overview

- 2.6 A substantial proportion of the SDL lies within 5 and 7km of the Thames Basin Heaths SPA. The nearest component of the SPA to the SDL is Bramshill SSSI, which lies about 5km south

east of the centre of the proposed Shinfield West development. The University of Reading commissioned Ecological Planning & Research Ltd (EPR) to produce an Overarching Thames Basin Heaths SPA Impact Avoidance Strategy for the SDL, together with a separate Strategy to address the potential impact of residential development at Shinfield West.

- 2.7 The key principles underlying the Impact Avoidance Strategy (IAS) were agreed with Natural England in February 2009. Subsequently, further detail was developed and agreed through a series of meetings and correspondence with Natural England during the course of 2009. Included within the IAS is the proposal for SANG to the north west of Shinfield known as the Ridge SANG, that is being delivered in conjunction with development at Shinfield West, but will have additional surplus capacity to accommodate other development elsewhere. A Reserve SANG was also included within the IAS as an area that could potentially be made available if required, and this has since been incorporated into the Ridge SANG. The principles of the IAS were accepted by the Secretary of State by grant of consent for the Shinfield West Outline Planning Application in 2012 following Public Inquiry.

The Impact Avoidance Strategy and Shinfield West

- 2.8 The IAS for Shinfield West (appended to the Environmental Statement (ES) for the outline planning application) shows that most of the proposed development is within 5km of the Thames Basin Heaths SPA, with the balance sitting within the 7km zone. If additional pressure on the SPA is to be avoided, the location of the development requires the provision of a substantial area of SANG to provide for the recreational needs of the new population, and to attract existing residents' outdoor recreation activities away from the SPA.
- 2.9 The IAS for Shinfield West sets out how research and assessment has led to the layout and composition of the SANG that is being delivered in conjunction with development at Shinfield West. These were refined and developed on an iterative basis, to arrive at current proposals.

SANG in the South of the M4 SDL

- 2.10 Whilst the Shinfield West IAS sets out how sufficient SANG is being delivered to accommodate development at Shinfield West, as mentioned, above these areas have nonetheless been planned in consultation with Natural England to fall within part of a wider SANG strategy for the South of the M4 SDL, further components of which will be delivered with future planning applications.
- 2.11 The South of M4 SDL is large enough to require, and has sufficient resources of land to provide, its own 'bespoke' SANG strategy, tailored to the development design and included within the masterplan for the SDL.
- 2.12 The Overarching SDL IAS (EPR, 2010b and 2012) proposes a network of substantial SANG sites, at May's Farm Meadows, the Ridge, Five Acre Field, and at the Loddon valley (called Langley Mead). These sites are linked through other open spaces to provide easy access to the SANG network for local people, and convenience for management operations. The area of all the SANG that currently benefits from some form of planning consent totals 44.02ha, of which 14.63 ha is in the Ridge SANG.

- 2.13 All these proposals are illustrated on the SDL masterplan. Additionally, at time of writing, an application has been submitted to extend Langley Mead SANG to the north up to Arborfield Road by an additional 21.7ha. The proposed extension has been agreed in principle with Natural England and WBC officers, but was refused planning permission on 13 February 2019 and its delivery is uncertain.

SANG Phasing

- 2.14 As part of the proposed SANG suite, the Ridge SANG will provide a selection of walks of varying lengths. In order to ensure that SANG area is brought forward in parallel with (or just in advance of) an increase in demand generated by development, it is intended that delivery and/or public access to discrete parcels of the SANG will be tied to, and triggered by, future housing occupation which requires SANG capacity.
- 2.15 The attribution of the various compartments of the overall Ridge SANG to discrete parcels of residential development has been agreed with WBC, and trigger points for the delivery of additional areas of the Ridge SANG have been agreed and incorporated into Section 106 agreements for the developments that rely upon it. Further, Condition 73 of the Shinfield West Outline Consent (O/2010/1432 and VAR/2014/0624) requires that part of the Ridge SANG relied upon by development at Shinfield West to be made available for public use no later than the occupation of the 837th dwelling.
- 2.16 Condition 73 of the Shinfield West Outline Consent states:
- “Prior to the occupation of the 837th dwelling hereby permitted (or earlier if required), a Ridge SANG Management Plan drawn up in accordance with the principles in Appendix 9.5 of the Shinfield West Environmental Statement dated June 2010 shall be submitted to and approved in writing by the local planning authority. The Ridge SANG shall be implemented thereafter in accordance with the approved Management Plan following a review of the approved Management Plan”.*
- 2.17 At time of writing, the Ridge SANG Car Park, the crossing points over Hyde End Lane and the northern half of the Ridge SANG (Phases 1 to 2) have been delivered.
- 2.18 The remainder of the Ridge SANG (Phases 3 and 4) will be delivered as required to serve development anticipated to come forward in the future, including a site within the SDL at Land South of Cutbush Lane, Shinfield.
- 2.19 This Revised Management Plan has therefore been produced for submission to WBC to enable Condition 73 to be discharged in respect of the Ridge SANG, and to provide the information that will be required by any developments that are allocated capacity within it, including Land South of Cutbush Lane.

3. THE AIMS FOR THE RIDGE SANG

Principal Aims

3.1 The two principal aims of the creation and management of the Ridge SANG are to:

- Meet the criteria in the endorsed JSPB Delivery Framework (2009) and Natural England's "Guidelines for the Creation of Suitable Alternative Natural Greenspace" (2008) for the provision of SANG, for as long as is required, by contributing requirements towards the overall suite of SANG and green open space being provided with development at the South of the M4 SDL; and
- Restore, through traditional agricultural management, the naturalness of the Ridge SANG area's inherent local countryside character, enhancing its nature conservation value and biodiversity, in accordance with the NPPF.

3.2 These principal aims are addressed through the following:

- Research on the physical and biological conditions of the site, including a review of its landscape history;
- Setting out design principles to guide the creation and restoration of appropriate habitat and its future management;
- A description of the habitats appropriate to the SANG area and that match the SANG Guidelines Criteria; and
- A description of the character and extent of the recreation facilities that will become available on the Ridge SANG.

3.3 How the SANG criteria will be met is addressed in **Section 4** under 'Design Principles'.

Enhancing Biodiversity

3.4 The design principles for the creation and management of the Ridge SANG have taken the following aims into consideration, in accordance with the NPPF:

- Maximising incidental gains to biodiversity through management, so that the SANGs are as attractive and interesting as possible for people to visit in place of the SPA and to support the requirements of NPPF for biodiversity enhancement; and
- Providing stable and secure opportunities for creating new habitats and features of ecological value to compensate for those lost to development, insofar as this can be reconciled with the proposed recreational use of the SANGs.

4. DESIGN PRINCIPLES AND THE SANG MASTERPLAN

NE's SANG Requirements

4.1 Proposals for the composition and layout of the infrastructure, habitats and features of the Ridge SANG are shown on the Landscape Masterplan (**Appendix 1**).

4.2 There are two key parts to creating a SANG. They are:

- Creating and managing a varied and natural landscape with semi-natural habitats; and
- Providing a convenient and satisfying recreational experience so that many new or existing residents of the area, who would otherwise travel to the Thames Basin Heaths for a walk, with or without a dog, opt to visit the Ridge SANG as an alternative.

4.3 Natural England has issued "Guidelines for the Creation of Suitable Alternative Natural Green Space" (2008). The table of the requirements set out in these Guidelines with a summary description of how they are being addressed for the Ridge SANG is provided in **Table A2.1 in Appendix 2**.

A Natural Countryside Environment with Semi-Natural Habitats

4.4 The SANG Guidelines set out that a SANG, or suite of SANGs, must be perceived by users as a natural environment comprised of a variety of semi-natural habitats.

4.5 Research on the landscape history of the Ridge SANG area in conjunction with data on its existing biological features has been used to define what would be a natural looking landscape for the SANGs that would be appropriate to its ecological context. Research has also been carried out to identify suitable types of semi-natural habitat and their management for the successful creation and management of the SANGs. Habitats that are proposed include (NB: each of the habitats below is representative of a NERC Act 2006 Section 41 Priority Habitat Type):

- Newly planted areas of lowland mixed deciduous woodland;
- Hedgerows comprised of native woody species of shrubs, with ground flora and climbers;
- Extensive areas of newly created species-rich mesotrophic (neutral) grassland ('lowland meadow') on the lower and mid-slopes of the ridge;
- Lowland dry acid grassland on the dry sandy and gravelly imported material on the top of the ridge; and
- Ponds and surrounding damp grasslands at the lowest point to the north of the Ridge SANG.

Providing a Convenient and Satisfying Countryside Experience

- 4.6 Research carried out by Natural England and others has shown that it is possible to influence the recreational habits of people by the provision of suitable environments in which to walk, especially if they are well connected to footpaths to avoid the necessity of people using vehicles.
- 4.7 The Ridge SANG will provide an enjoyable walk through diverse and varied semi-natural habitat with long-distance views to the north and possibly also to the south from the ridgeline. It is designed to be readily accessible from the whole of the Shinfield West development, and makes provision for accessibility from development elsewhere in the SDL by safe pedestrian routes through other areas of green open space.
- 4.8 An important part of the design of the Ridge SANG is its connectivity, via SANG links, to other SANG areas and to peoples' homes throughout Shinfield West and beyond.
- 4.9 For the Shinfield West development, the SANG is well connected to other proposed SANG at the Loddon (known as Langley Mead), via the linking area of Public Open Space known as the 'Strategic Green Space' (SGS).
- 4.10 The SANG is also linked westwards across Hyde End Lane to a further SANG known as May's Farm Meadows between Spencers Wood and Three Mile Cross (which has been delivered already), which in turn is linked by a public footpath WBC's SANG at Clare's Green, which is located adjacent to Five Acre Field SANG. The link between the Ridge SANG and May's Farm Meadows SANG areas is via two safe pedestrian crossing points. This extended SANG connectivity will, ultimately, make it possible to have a walk of 6-8km through substantially natural countryside.
- 4.11 In addition to providing the appropriate physical space, a range of walks, including circular walks of around 2.5km, have been provided – the first of these is at Langley Mead SANG, and a further walk of this length will be provided by the Ridge SANG and May's Farm Meadows SANG collectively once they are delivered in their entirety. Smaller circular walks will also be possible within the Ridge SANG alone. The majority of paths will appear to have a natural surface, even if constructed beneath, but some routes will be surfaced with bound gravel or hoggin. The SANGs will also have safe pedestrian access and feel safe to walk in.
- 4.12 An essential function of the Ridge SANG will be to attract people who want to walk a dog. A crucial aspect of such provision will be that the dog will be able to be let off the lead for exercise. It will be possible to let dogs off the lead at any point in the SANGs at all times of the year. Careful consideration has been given to the interaction between dogs and the grazing regime that will be instituted. There are numerous examples of how grazing for conservation can be reconciled with the needs of public access for recreation – the two are not in conflict if adequately planned. Grazing stock will be selected for docility and grazing will take place seasonally over only a limited area at any one time.
- 4.13 A fundamental objective for the SANG is to create a greater diversity of flora and fauna, both for conservation purposes and for the enjoyment of recreational users. Semi-natural species-

rich grasslands with areas of scrub and trees along the edges will be created and then maintained by targeted management measures, including grazing.

- 4.14 Management of the SANGs and the green links connecting it to the development and the wider SANG suite are planned to be complementary, with the intention of extending a countryside experience as close to the doorstep as possible.
- 4.15 The manner in which the NE SANG Guidelines are addressed to ensure that the Ridge SANG will be effective in attracting visitors who would otherwise pursue recreational activity on the SPA are also set out in the Shinfield West Thames Basin Heaths SPA Impact Avoidance and Mitigation Strategy (EPR, 2010 and 2012).

Green Infrastructure and Accessibility

- 4.16 The design of the Ridge SANG has considered its setting in the wider area, both for its accessibility and as part of a broad suite of SANG green infrastructure that can be easily managed in a co-ordinated way using simple agricultural techniques. The SANG has been designed to be part of a multifunctional greenspace infrastructure, providing biodiversity, landscape, recreational, leisure and amenity benefits.
- 4.17 The SANG grasslands will be an integral part of the recreational amenity land of the South of M4 SDL. It is designed to form strong linkages to the Shinfield area and the rest of the SANG network in the SDL.
- 4.18 The principal pedestrian access will be gained from the south, where the SANG will be joined directly to the footpath network within the Strategic Green Space between the settlements of Shinfield, Spencer's Wood and Three Mile Cross, to create a positive link between the Ridge and the SDL central open spaces at High Copse Common, and then on westwards to the Clares Green SANG and south to the Langley Mead SANG.
- 4.19 As shown on the Landscape Masterplan at **Appendix 1**, vehicular access to the Ridge SANGs is off Hyde End Lane, where a car park provides spaces for 10 cars, enabling people within a wider driving catchment to reach the SANG to pursue recreational activity. Hyde End Lane itself is subject to calming measures and two pedestrian crossing points have been installed to allow a longer circular route to be delivered westwards between the Ridge SANG and May's Farm Meadows SANG.
- 4.20 Within the SANGs, paths will be constructed to provide a range of walk routes of varying lengths. The paths will be accessible at all times of year, thus avoiding impacts on heathland birds through diverting recreational users away from sensitive habitats.
- 4.21 Paths will generally appear as shorter (mown) grass at the edges of hay meadows and pastures. In softer areas or areas where broader access is required, they will be constructed of bound gravel hoggin. A tarmac surfaced path will run along the crest of the ridge and will not be visible from lower lying areas.

Habitat Creation and Management Principles

Semi-Natural Habitats

- 4.22 The area of the proposed SANGs was previously used for arable. Part of the arable on the ridgeline has been covered with imported material from part of the Shinfield West development. The creation of the Ridge SANG therefore takes place on ex-arable soils on the main slope and imported sands/gravels and clays on the ridgeline.
- 4.23 To provide a combination of semi-natural diversity and recreational space, the main habitat within the SANG will be grassland. Areas of newly planted scrub and trees in the northern part of the SANG add variation to the scene. Detail on the types of semi-natural habitat to be created are set out in **Section 6**.

Source of Species

- 4.24 The plant species needed to create the new habitats of the Ridge SANG are not present in the existing arable habitat and are very unlikely to be present in any numbers, if at all, in the soil seed bank. Plant species for all the habitats required on the SANG will therefore have to be imported and sourced locally. 'Locally' is defined here as from habitats within the Loddon catchment or, if no suitable sources are available there, the Thames Basin.
- 4.25 The main technique proposed to introduce forb species to the SANG is by using proprietary wildflower seed mixes.

Soil Fertility

- 4.26 The soils in the SANG area were under arable management and have been so for a considerable period. This land use regime has included the addition of fertilisers and the ploughing in of dairy farmyard manure making the soils nutrient-rich. The nutrient levels of these soils will need to be reduced so that semi-natural habitat can be established and maintained.
- 4.27 Methods to reduce the soil nutrient levels will include depletion of nutrients under grazing or mechanical mowing and hay making.

Managing Species-Rich Grasslands

- 4.28 The intention at present is to manage the SANG partly as hay meadows with aftermath grazing and seasonally grazed pastures. These two grassland management types will provide a varied, natural-looking landscape, seasonal variation, open views and ample open recreational space.

Grazing for Biodiversity

- 4.29 A key feature of the Ridge SANG is that, where possible, it will be managed with seasonal grazing as a fundamental component of the management. The acceptability of this management regime was established following the Shinfield West Public Inquiry, and has operated now for several years without any significant incident at Langley Mead SANG. Grazing is the most natural, beneficial and sustainable way to restore, manage and, ultimately, sustain species-rich grasslands. The benefits to biodiversity of grazing include:

- Control of the development of scrub;
- Preventing the development of rank species-poor swards;
- Creating structural diversity; and
- Providing essential small patches of bare ground for the establishment/regeneration of species.

4.30 In addition to the above biodiversity benefits, grazing is both cost effective and sustainable. Mowing as a tool to manage grasslands, by way of contrast to grazing, offers less in the way of benefits listed above; management solely by mowing tends to produce a habitat that is more uniform and generally less biodiverse.

Cattle Grazing and Public Access

4.31 Management of the SANG will incorporate best practice and guidance with respect to public recreational use, including dog walking.

4.32 The Grazing Animals Project have issued guidance on Dogs and Livestock (GAP Information Leaflet 12 Dogs and Grazing) and their management suggestions that will be drawn upon in managing the SANGs, these include:

Choice of Livestock

4.33 Animals that could react aggressively to dogs, for example cows with young calves, would not be used.

4.34 Particular care will be taken in choosing the cattle breed, type and temperament used for grazing. At present, it is proposed that Aberdeen Angus Cross cattle will be used to graze the SANG. These animals were bred specially by the University of Reading's Farm department for use in grazing the publicly accessible SANG areas in the SDL. They have now been used for four years at Langley Mead SANG without incident and have been the subject of positive visitor responses received in annual visitor monitoring surveys that have been carried out. Information in the breeds profiles handbook produced by the Grazing Animals Project indicates that Aberdeen Angus are a docile breed appropriate for use on public sites.

Use of Dogs

4.35 GAP suggest that using a dog as part of the site management could have a positive effect on stock management and public perception.

Dog Walkers and Managing the SANG

4.36 Dog walkers could play an important role in the management of the Ridge SANG as they are likely to be visiting the site on a regular basis throughout the year. Dog walkers, if interested and encouraged, could participate in various aspects of the management, including voluntary work checking stock and site infrastructure.

4.37 Other management techniques and recommendations set out in the GAP Dogs and Livestock Advice will be drawn upon where appropriate – for example information, design and opportunities for discussion between groups.

4.38 Grazing on the SANG will be varied and there will always be areas that will not be grazed at a particular time owing to the pattern of use by the small cattle herd present, ranging over the wide expanse of available grassland. The numbers of cattle on the SANG are likely to be low in number for most of the time. Visitors will easily be able to avoid the small grazing herd by choosing their walking route accordingly. The open landscape of the Ridge SANG contrasts with the more enclosed fields of Langley Mead SANG and it will be easy to see where cattle are grazing at any given time.

Seasonal Grazing

4.39 The Ridge SANG will be seasonally grazed with the grazing requirements determined by the need to manage the permanent pastures. There will always be wide areas on the SANG that will be effectively free of cattle. An indication of the seasonal demands for grazing on the SANG is given below in **Table 4.1**:

Table 4.1: Indicative Seasonal Grazing Pattern on the Ridge SANG

| Month | Dry acid grassland | Clay soil grassland |
|-----------|--|----------------------------------|
| March | Early grazing if growing season underway | Grazing if needed and dry enough |
| April | Early grazing if growing season underway | Grazing if needed and dry enough |
| May | Low intensity grazing | Grazing |
| June | Low intensity grazing | Grazing |
| July | Closed to grazing | No Grazing |
| August | Closed to grazing | No Grazing |
| September | Closed to grazing | No Grazing |
| October | Low intensity grazing | Grazing |
| November | Low intensity grazing | Grazing if needed and dry enough |

4.40 December to February are likely to be months when the fields are too wet for grazing and/or that there is insufficient grass to support cattle and thus would not be grazed.

4.41 The actual timing and pattern of grazing will vary from year to year and season to season according to variables such as sunshine levels, rainfall patterns, etc.

Numbers of Animals

4.42 The core number of cattle likely to be needed to graze the Ridge SANG will be in the region of around 10 animals, though numbers may need to increase to a maximum of 15 should the management of the habitats demand additional grazing pressure. Ideally, the core herd will be hefted to the SANG complex, knowing the area well and becoming used to the presence of people with dogs.

4.43 There may also be a long-term decline in the numbers of animals that the SANGs will support as soil fertility in the SANG will begin at a high point and then decline over time as the change in land use lowers soil fertility.

- 4.44 The actual number of animals will vary from year to year, as would be expected in any grazing system – natural or agricultural – and will be driven by the need to restore and manage the habitats required for the SANG.
- 4.45 Decisions such as this should be under the control of the site management team, so that they can respond to seasonal, annual, or longer cycles of change, for example climate, to meet the management objectives of the Ridge SANG.

Enhancing Biodiversity on the Ridge SANG

Acid Grassland Creation

- 4.46 In addition to meeting the various SANG requirements for the Ridge SANG, there is an aspiration to create new areas of acid grassland, a habitat listed under Section 41 of the Natural Environment and Rural Communities Act 2006 as being a ‘priority’ for nature conservation. New areas of acid grassland have already been created to the south of the SANGs in the Strategic Green Space (SGS). This was done in 2017 using areas of acid grassland translocated from the former School Green Gravel Pit.
- 4.47 The first two years of vegetation monitoring on this translocation have now been carried out (in 2018 and 2019), and the results indicate that an acid grassland is successfully establishing, with a significant increase in coverage of the key species Knotted Clover *Trifolium striatum* particularly notable.
- 4.48 The Ridge SANG presents the ideal opportunity to deliver net gains in biodiversity by creating new areas of dry acid grassland, for the following reasons:
1. Subsoil material that has been made available through the digging of footings from residential development at Shinfield West, which is comprised of sandy and gravelly material of low nutrient status, is ideal for creating acid grassland. The ridge itself, which runs from west to east across the proposed SANG, has been subject to land raising with this material under a separate planning consent, to minimise visual impacts caused by proposed residential development. Using the sandy and gravelly material made available by the development to raise the ridge in this way has created what should be ideal conditions for the creation of acid grassland.
 2. As the SANG must continue to be managed indefinitely to ensure that they continue to function as an impact avoidance measure to protect the Thames Basin Heaths SPA, the creation of acid grassland can be carried out within the context of the management plan, thus ensuring, with a much greater degree of certainty, that the necessary management measures to ensure the establishment of acid grassland will be delivered and subject to long-term stewardship for success.
- 4.49 The Landscape Masterplan (**Appendix 1**) shows the area where the raised ridge has been created, and within which the area of acid grassland will be created as part of a wider mosaic of grassland habitats.
- 4.50 Appropriate seed mixes to create the acid grassland will be imported to initiate the creation of the proposed areas of acid grassland. The long-term objective for these areas will be to work

towards a sward that resembles National Vegetation Classification (NVC) community U1d Acid Grassland, which is the habitat type that was recorded nearby at School Green Gravel Pit. To achieve this, the areas of the Ridge SANG that are located up on the imported areas of sandy gravelly soils on the ridge will be initially sown with a seed mix that contains forbs appropriate to this NVC type, such as Emorsgate EM7 of equivalent.

Bird Habitat

- 4.51 The bird species which will benefit from habitats developed specifically on the Ridge SANG include breeding Yellowhammer *Emberiza citronella*, Linnet *Linaria cannabina*, and potentially Skylark *Alauda arvensis*. Barn Owl *Tyto alba*, Kestrel *Falco tinnunculus*, Fieldfare *Turdus pilaris* and Redwing *Turdus iliacus* will also have improved foraging habitats at various times of year.

Compartmentalisation and Phased Delivery of the SANG

- 4.52 A key influence on the design of the SANG has been the need to retain flexibility in delivering SANG area in parallel with the rise in demand generated by residential development. The phased delivery of the Ridge SANG has been (or will be) secured through the various Section 106 agreements and planning conditions associated with the residential development parcels that come forward relying upon them. For this reason, this management plan does not address the issue of phasing. Instead, the management plan outlines how each area of the SANG will be created and thereafter managed *in perpetuity*.
- 4.53 The purpose of this approach is to enable habitat creation at the Ridge SANG to begin sufficiently in advance of the required phased delivery points, so that the natural habitats are given time to develop and mature – thus ensuring that sufficient area of attractive SANG for planned new development in the South of the M4 SDL is available in time to meet demand.
- 4.54 It is expected that other development within the SDL will come forward in good time and require SANG capacity (thereby enabling the full area of the Ridge SANG to be made publicly accessible). However, in the unlikely event that there is a delay in other applications coming forward, the surplus area that is not required will remain closed to the public until such time as its capacity is required by additional applications. This approach will enable habitat improvement works to continue on these surplus areas uninterrupted, whilst still enabling the required area of SANG to be delivered at the point at which it is required – linked to specific associated development that has contributed towards its implementation and long-term upkeep.

5. THE PHYSICAL AND BIOLOGICAL CHARACTERISTICS OF THE SANG AREA

Introduction

- 5.1 This section describes the physical & biological characteristics of the SANG area. It covers a brief overview of the physical nature of the site; its landscape history, the land management as part of the University of Reading Farm and the existing features of ecological value. These data are necessary to understand how the management proposals for the Ridge SANG have been derived, and how they will work.

Sources of Data

Data Searches

The background research work on Shinfield West included a data search from Thames Valley Environmental Records Centre (TVERC), the results of which informed the original 2010 Outline SANG Habitat and Creation Plan. Species recorded in the wider landscape around Shinfield include several species of bat, Badger *Meles meles*, Slow-Worm *Anguilla fragilis*, Grass Snake *Natrix helvetica* and amphibians including Common Toad *Bufo bufo*, Common Frog *Rana temporaria* and Great Crested Newt *Triturus cristatus*. These records were taken into account when specifying the broad habitat types that are expected to be created at the SANG, although EPR has accumulated substantial knowledge of wildlife in the Shinfield area through many years of survey work, as detailed below..

Fieldwork

- 5.2 The main source of survey data used in this management plan has been the wider ecological investigations of the Shinfield West site (Technical Appendix to Shinfield West ES, EPR 2010c; Update Phase 1 2014; Update Bat Surveys 2014; Update Breeding Bird Surveys 2014; Confidential Update Badger Survey Summary of Results, EPR 2016). Biological surveys have also been carried out over a wide area of countryside around the Shinfield landscape during this period, including bat, bird, Badger and reptile surveys around the Land South of Cutbush Lane site in 2017/18. The existing features that were noted during these surveys have been taken into account in developing the SANG proposals.

Physical Nature of the Site

- 5.3 The habitat creation works at the Ridge SANG are underpinned by an understanding of the underlying topography and geology, hydrology and soils.

Topography and Geology

- 5.4 The SANG lies within the Foudry Brook valley, which is part of the River Kennet catchment. The SANG area is on north west-facing slopes below the ridgeline separating the Foudry Brook and Loddon valleys.
- 5.5 The British Geological Survey (1998) 1:10,000 Geology Map (Sheet SU76NW Solid and Drift Edition) shows that the SANG overlies 4th terrace gravels on the ridgeline and London Clay lower down the slopes. There are no known gravel terraces on the SANG below the gravel cap on the ridge.

Hydrology

- 5.6 The Ridge SANG has no known streams or natural surface water drainage features, though the soils are surface water gleys. There is a pond located just outside of the SANG boundary, to the north east.

Soils

- 5.7 The Soil Survey of England and Wales (1983) have mapped two soil types on the SANG area:
- Surface water gleys of the 711h Wickham 4 Association over the London Clay; and
 - Ground water gleys of the 841b Hurst Association over the gravel capping the ridge.
- 5.8 Jarvis et al., (1984) describe most soils of the Wickham 4 association as being '*...waterlogged for long periods when undrained...*' and prone to droughtiness in the summer. The Hurst Association soils tend to be waterlogged in winter, though less so than the Wickham 4 soils, and droughted in summer.

Landscape History

- 5.9 The implementation of the SANG requires 'creating' naturalness in what was an intensive modern agricultural landscape. A key source of information about what can practically be achieved in terms of habitat types and diversity is provided by historic maps, which record many aspects of the historic use and management of land.
- 5.10 This information is crucial because it reveals the inherent capacities and characteristics of soils, in terms of drainage and productivity, in a period before the use of artificial fertilisers obscured the innate capability of the different ground conditions to sustain crops. Old maps show how the people who depended upon their use of soils could best make use of the resource. Other resources supporting this approach include information in old and modern floras (e.g. Druce, 1896 and Crawley, 2005).
- 5.11 The design of the Ridge SANG benefits from the availability for landscape history research of historical maps covering the area:
- 1756 Earl of Fingall's Shinfield Estate map (**Map 4**);
 - 1809 Ordnance Surveyor's (OS) Drawings for the 1" to the Mile (surveyed 1809) and the published version in 1817 (**Map 5**);
 - 1836 Tithe map;
 - 1883 first edition of the Ordnance Survey 6" to the mile (**Map 5**); and
 - Land Utilisation Survey 1936.
- 5.12 Part of the land use of the Ridge SANG can be obtained from the 1756 Earl of Fingall's Shinfield Manor Map (the eastern part of the SANG area lay outside the Earl's holdings and thus no land use detail is shown on his map). The land on the SANG that was owned by the Earl of Fingall was in arable use in small enclosed fields. The 1809 Ordnance Surveyors drawings show that there was no rough grazing in the SANG area. The 1836 tithe map shows

an old pattern of fields. The first edition 6" OS map of 1883 shows that the small enclosed field landscape shown on the Earl of Fingall's map had gone and that the area was, mostly, a single large field, much as can be seen today.

- 5.13 The Land Utilisation Survey (LUS) of 1936 maps the SANG area as Arable Land, a land use category defined in the LUS as including fallow, rotation grass and market gardens.

Existing Land Management

- 5.14 The Ridge SANG fields are part of the University of Reading's farm holding. The land has been in continuous arable use for many years, with maize and winter wheat the current cropping regime. The Ridge SANG area was also used to dispose of farmyard manure (FYM) from the University's dairy herd. FYM was added at a rate of approximately 12 tons per acre per year, equivalent to approximately 2240kg per hectare per year. In addition to adding the FYM, mineral N and K were added annually.
- 5.15 The soil was tested for nutrients prior to the production of the original Outline SANG Creation and Management Plan in 2008 giving indices for P and K as 3 and -2 respectively (the indices for nutrients are those as set out in MAFF's Fertiliser Recommendations for Agricultural and Horticultural Crops RB209 7th edition, 2000).
- 5.16 Additional soil sampling was carried out in 2014 in the area of the Strategic Green Space (SGS) located to the south-east of the SANG for the purposes of planning the proposed acid grassland translocation. The area sampled was subject to a similar arable regime and is comprised of similar soils. The results showed that, broadly, pH was neutral and the soil had high phosphorous and nitrogen levels, but a low potassium index (in agricultural terms).
- 5.17 Since this testing, the southern part of the Ridge SANG has been raised with imported sandy and gravelly subsoil from the Shinfield West development under separate planning consent, such that this area is now likely to have significantly lower levels of these nutrients. Additionally, the area of the Ridge SANG from the two woodland planting blocks northwards has already been created (sown with wildflower seed mixes and subject to tree and hedgerow planting). These activities are all likely to have helped reduce nutrient levels, albeit probably only marginally in such a short time. Soil nutrient levels are therefore likely to continue to represent a constraint on the development of species-rich grasslands for several years to come, which will need to be counteracted through management.

Agricultural Land Classification

- 5.18 Work carried out by Reading Agricultural Consultants (RAC) and the Ministry for Agriculture and Fisheries (MAFF) in mid 1990's map the Agricultural Land Classification Values on the Ridge SANG as being of Agricultural Grades 3a (Good) and 3b (Moderate).

Existing Biological Features of Nature Conservation Importance

- 5.19 The pre-development (2010) survey of the Phase 1 habitat surveys for The Ridge SANG area are shown on **Map 3** for context. The Phase 1 survey has not been repeated as the SANG is part-way through the process of being created in accordance with the original Outline consents, and consequently habitats present are in a state of flux.

5.20 The only biological features of any note in this intensively managed landscape are the boundary hedges. These will be retained and enhanced within the design and management of the Ridge SANG. The remainder of the site is of little ecological importance, meaning that there are significant opportunities to enhance the value of the site for wildlife and nature conservation through the SANG proposals, both as mitigation/compensation for habitats and features lost to development at Shinfield West (where the specific requirements of such habitats and features can be reconciled with the anticipated recreational activity that will take place on the SANG), and more generally for biodiversity enhancement as required by NPPF and local planning policy

6. HABITAT CREATION AND MANAGEMENT

Introduction

- 6.1 The results of research into the physical and biological characteristics of the Ridge SANG, in conjunction with the recreational requirements of SANG, have been used to design semi-natural habitats. The enhancement of local biodiversity as set out in the NPPF and local planning policy has also been taken into consideration in proposing habitats for the SANG.
- 6.2 The Phase 3 and 4 SANG area will be composed of two distinct areas:
- The imported sandy/gravelly/clayey material that will cap the ridgeline; and
 - The London Clay slopes on either side of the ridge.
- 6.3 An indication of the extent of these two zones is shown on the Landscape Masterplan at **Appendix 1**.

The Semi-Natural Habitats Proposed for the Ridge SANG

- 6.4 The landscape history review described above shows that the SANG area has been part of an anciently enclosed landscape and that it did not support any woodland or common land. There is evidence that it has been in use as arable land from as early as the 1750s until recently, and there is now no direct evidence for what the semi-natural habitats were for this area in its pre-agricultural use.
- 6.5 All habitats will have to be created from new to replace the existing arable. The requirement is to provide open and varied recreational space set in semi-natural habitats and so the following habitats are proposed to establish the SANG:
- Acid grasslands for the imported gravelly soils on the ridge;
 - Species-rich grassland elsewhere on the slopes of the ridge;
 - Potentially areas of rush pastures (i.e. the wetland) on the lowest ground;
 - Scrub with trees thickening up the edges of the SANG; and
 - Hedged boundaries.
- 6.6 Other habitats that would complement the above main habitat types, for example a pond on the lowest ground amongst rush pastures, will be incorporated where suitable.
- 6.7 The habitats listed above will meet the SANG biological and recreational criteria and provide compensation in part for habitat loss elsewhere in the Shinfield West development.

Constraints to Habitat Creation

- 6.8 The two main constraints to creating semi-natural habitat on ex-arable soils are soil fertility and availability of species that comprise semi-natural vegetation (Gilbert & Anderson, 1998 and Walker et al., 2004). Both of these constraints apply to the Ridge SANG area.

The Soils of the SANG Area

- 6.9 As described in **Section 4**, the SANG soils have elevated soil nutrient levels because of the addition of chemical fertilisers and substantial quantities of dairy farmyard manure. These soil conditions present a constraint to the establishment of semi-natural habitats, which are typically associated with less fertile soils (Walker et al., 2004 and Gilbert & Anderson, 1998). Soil fertility will have to be reduced from its current high levels to lower levels for the successful establishment and subsequent maintenance of semi-natural habitats required for SANG.
- 6.10 This will be achieved through the following principal means:
- The importation of sandy, gravelly material and subsoils with lower nutrient levels from the Shinfield West development and their spreading onto the top of the Ridge area (this has already taken place);
 - Gradual depletion of nutrients through conservation grazing, mechanical cutting and removal of vegetation (including but not limited to the annual hay cut); and
 - Natural soil leaching with no further agrochemical inputs.
- 6.11 The above processes will take some years to effectively reduce the levels of nutrients present in the soil to those which enable a self-sustaining diverse grassland to persist. However, the proposed management measures of grazing and cutting, and inclusion of grass hemi-parasites such as Yellow Rattle *Rhinanthus minor* in sown seed mixes will also act to suppress the vigorous growth of grass and weedy forb species to enable native wildflowers to establish and persist in the sward until such time as conditions are more suited to their requirements. The fact that the seed bed is beginning from a fairly sterile arable soil (in terms of the existing seed bank) will also assist the establishment of native forbs.

Sourcing Species for the SANG

- 6.12 Given the landscape history of the proposed SANG area, it is unlikely that there will be many of the species typical of semi-natural grasslands present within the soil seed bank. The soil seed bank cannot thus be relied upon as a source of species to establish semi-natural grasslands. Furthermore, there are no adjacent, species-rich semi-natural grasslands that could act as natural sources from which species could colonise into the SANG area to establish semi-natural habitat. Species will therefore have to be brought to the SANG in order to create the semi-natural vegetation required.
- 6.13 It is unlikely that sufficient suitable habitat for harvesting green hay will be able to be identified in time for such material to be incorporated into the initial habitat creation at the SANG. This is because all known potential sources of green hay with a species complement of the appropriate NVC types with local provenance have already been explored and used for the creation of Langley Mead SANG to the south. The creation of the Ridge SANG is therefore already underway with appropriate wildflower seed mixes being used.
- 6.14 However, as the diversity and abundance of forbs improves on other SANG areas such as Langley Mead that have been inoculated with green hay from local donor sites, these SANG areas may in time themselves provide suitable donor material to further enrich other areas of the SANG suite, such as the Ridge. Such material would be collected as green hay in later

summer and spread onto the receptor SANG after it had been mown and harrowed. Opportunities to achieve this will be sought as SANG management proceeds over the course of the years.

Target Habitats

Acid Grasslands on Gravel Terrace Cap

- 6.15 The gravel terraces that have been excavated at Shinfield West to provide material for the ridgeline cap in the SANG are a mixture of clays, sands and gravels.
- 6.16 The gravel terrace material will, at least in part, be infertile and subject to droughting; this type of substrate will support parched acid grasslands. Evidence from acid grasslands in the local area, including the stands that have assembled on the capped surface of School Green Gravel Pit, indicate that the NVC type **U1d** *Agrostis capillaris – Rumex acetosella-Festuca ovina* grassland, *Lotus corniculatus – Anthoxanthum odoratum* sub-community could establish on the ridgeline cap.
- 6.17 U1 material from School Green Gravel Pit has already been collected and used as a seed source for habitat creation within the SGS under the prescriptions outlined by EPR in the Environmental Management Plan (EPR, June 2014), which was submitted to and agreed by Wokingham Borough Council for the purposes of discharging Condition 75 of the Outline Consent in respect of the SGS itself. The first two years of monitoring of the receptor site for this acid grassland material returned positive results, including a significant increase in the main species of interest, Knotted Clover. In time, green hay from the receptor location may provide another potential source of donor material to enrich the drier grassland habitats creation on the ridge.
- 6.18 In the meantime, a suitable wildflower seed mix for sandy gravelly substrates, that contains species appropriate to NVC U1d will be used to initiate the creation of habitats on the ridge. Examples of such a suitable seed mix would be Emorsgate EM7 or equivalent.

Mesotrophic Grasslands on London Clay Slopes

- 6.19 The soils over the London Clay are likely to be relatively wet in winter and dry in summer, with the upper slopes better drained than the lower slopes. The natural drainage pattern of these soils will have been heavily modified by their use for arable.
- 6.20 Target vegetation types for the SANG areas would be drier grassland on the upper slopes, merging into rush pastures on the lower slopes. Drier grassland types would be those related to the NVC type **MG5** *Cynosurus cristatus – Centaurea nigra* grassland and rush pastures would be those related to NVC rush pasture types **MG10** *Holcus lanatus – Juncus effusus* / **M23** *Juncus acutiflorus – Galium palustre*. To provide a 'natural' feel to the SANG and meet the semi-natural label, these swards should be species-rich.
- 6.21 Appropriate seed mixes for these areas would be Emorsgate EM4 or equivalent, although this mix will develop in different ways in different areas, depending on the hydrology and soil conditions.

Wetland Habitat

- 6.22 The Landscape Masterplan shows an area of wetland creation on the lower slopes of the Ridge SANG area. This would be expected to be a rush pasture sward. Small hollows that would be winter wet and summer dry would be dug into the rush pastures. A pond will be created here, if soil conditions and the location of underground services (e.g. electricity cables) permit – ideally, to have a natural look, the pond would have to be able to retain water because of impermeable ground conditions.

Trees and Scrub

- 6.23 Three discrete blocks of native-species tree and shrub planting have been created in order to diversify the range of habitats and break up the predominantly open character of the SANG. A variety of native tree and shrub species have been planted, including species such as Oak *Quercus* sp. and Field Maple *Acer campestre*, which will be managed as standard trees, and shrub layer species such as Hazel *Corylus avellana*, Hawthorn *Crataegus monogyna*, Holly *Ilex aquifolium* and Honeysuckle *Lonicera periclymenum*.
- 6.24 Planting was initially at a high density to promote growth. As trees and shrubs become established, thinning will be carried out to produce an irregular patchy structure, giving a natural feel to the landscape. Blocks of planted trees and scrub have been protected with deer fencing to enable planted stock to establish without damage, but this fencing will be removed once it is judged that the trees are of sufficient size to withstand browsing of both the deer and the cattle.

Hedges

- 6.25 Native-species-rich hedgerows, including at least nine woody species, supplemented in places with translocated mature hedgerow stock, have been planted along new field boundaries.

Management of SANG Habitats

Grassland

- 6.26 The key management demands will derive from the grasslands, which will be managed as a combination of hay meadow and seasonal grazing, with mechanical mowing used in place of grazing only as a last resort where there is difficulty sourcing appropriate grazing stock. There will be marked variation in the structure of the grassland, including locally dense swards (primarily around the edges) for mammals and invertebrates. Some bare ground will be sustained in the acid grassland/ridge cap area for invertebrate interest.

Trees and Scrub

- 6.27 Scrub blocks will be subject to periodic thinning, pollarding and coppicing, to promote the establishment of a diverse, patchy structure.
- 6.28 The initial dense planting of trees will be thinned out to provide natural looking clumps of trees that have room to develop spreading branches and a natural shape, rather than the 'lollipop' look of high forest plantation trees.

Hedgerows

- 6.29 Hedges will be cut on a long cycle and in rotation so that fruits and berries are available for wintering birds, such as Fieldfares and Redwings. This type of management will also favour continuity of habitat for insect and mammal populations.
- 6.30 The infrastructure to support grazing and allow for recreational access will include the following:
- Stock-proof fencing and gates;
 - Potentially a cattle corral; and
 - Water troughs.

7. RECREATIONAL INFRASTRUCTURE

- 7.1 The layout for the recreational infrastructure proposed for the SANG is shown on the Landscape Masterplan (**Appendix 1**). This layout may however be adapted if information suggests that an iterative change would have positive implications for the function of the SANG (for example, if visitor feedback indicates that additional gates or an alternative location for dog waste bins would be preferable).

Overview

- 7.2 The Ridge SANG will be available for use by all, including walkers, dog walkers, children, teenagers, adults, older and disabled people. Visitors will be able to visit the SANG by foot, wheelchair, cycle and by car.
- 7.3 Visitors will include both existing and new residents of villages/South of M4 SDL and people from a wider area via access arising from car parks and public transport.
- 7.4 As it is anticipated that the majority of users of the SANG will walk to the area from their dwellings in the existing and proposed areas of Shinfield village, it is proposed that there will be a good network of walking routes to the SANG. The SANG circular route footpaths will connect with the wider footpath network, will be mown by the Ranger on a regular basis and run through the cattle-grazed, herb-rich grasslands. Surfaced paths will be maintained as required by the Ranger.
- 7.5 The provision of a car parking area at Hyde End Lane will encourage the use of the SANG by those living some distance from the area who will drive to the recreational facility. Without the parking areas, on-street parking could occur with its clear disadvantages. For those wishing to drive and to avoid on-street parking, one small car parking area is proposed.
- 7.6 Unobtrusive information boards and waymarkers will be provided at strategic locations to encourage people to learn about the local environment and facilitate safe passage. The value of low-intensity cattle grazing for long-term biodiversity will be explained and a brief description of key features will be illustrated. These will be readily accessible by both the able-bodied and wheelchair users.
- 7.7 The Ranger will act as the local focus for SANG conservation activities and recreational uses. It is anticipated that a program of walks and talks will be initiated to encourage appreciation of the local natural environment.
- 7.8 Improvements in the design and provision of recreational infrastructure might occur as part of the ongoing management of the site, for example new footpaths or stiles could be inserted as desire lines across the site become apparent.

Infrastructure

Paths

- 7.9 The path network will predominantly comprise mown grass paths with appropriate surfacing laid where required by ground conditions or other access considerations.

Gates

- 7.10 A combination of different gate designs will be used across the site. Appropriate kissing gates or stiles will be used to facilitate public access between different stock proof compartments. Kissing gates will have lock compartments large enough to permit wheelchair passage, but these compartments will not be sufficiently long enough to allow motocross/scramble bikes to enter the SANG without significant physical effort in terms of lifting them over the gate/fence.
- 7.11 Access to the site for management machinery or grazing stock will be via standard agricultural 5-bar gates, locked to prevent inappropriate access or occupation of the SANG.

Fencing

- 7.12 Stock and dog-proof fencing with a single top strand of barbed wire will be used within the SANG to create grazing compartments and areas where dogs can exercise safely off the lead. This will also ensure that both the footpath across the ridge (FP16) and the footpath connecting the eastern side of the Strategic Greenspace with the school will be kept free of livestock at all times, in line with the Shinfield West walking and cycle strategy.
- 7.13 Fencing will be softened with scattered native hedgerow planting and has been set back from the highest point of the ridge so that it is not clearly visible on the skyline. The addition of some native standard trees along the ridgeline will also, in time, provide visual interest and focal points for walks. Once mature, circular benches can be added around the base of these trees to encourage visitors to take in the views of the surrounding landscape.
- 7.14 The fencing arrangement shown on the Landscape Masterplan (**Appendix 1**) has been designed to ensure that the foreseeable needs of the SANG can be met. However the wider SANG management strategy, including grazing compartments and associated fencing, will be reviewed when detailed plans for the adjacent Strategic Greenspace come forward, to ensure that a joined-up approach is taken.

Other Recreational Infrastructure

- 7.15 Other items of infrastructure will include dog waste bins and litter bins, benches, and interpretation boards at the principal access points providing information about the natural environment features as well as health and safety information.

Car Park

- 7.16 The car park (shown on **Appendix 1**) has been screened by planting scrub species including Hazel, Hawthorn, Holly, Spindle and Field Maple.

8. SECURING THE FUTURE OF THE RIDGE SANG

Capital Works

- 8.1 The University of Reading will be responsible for creating the SANG environment, including installing all of the necessary habitats, stock management and visitor-related infrastructure shown in **Appendix 1**, and they will undertake to recover proportionate contributions toward the cost of this from their development partners.

Securing Ongoing Management

- 8.2 The Ridge SANG will require funding at both the SANG creation and management stages. Funding is required to undertake the capital works, to underwrite the on-going maintenance, and for wardening.
- 8.3 The University of Reading as landowner will be funding the creation and implementation of the Ridge SANG. A proportion of the costs will be recovered, or secured in advance, from development partners.
- 8.4 Ongoing funding will also be required at a sufficient level to cover the expected annual costs of management, plus any significant capital requirements at key stages throughout the management term as part of the overall suite of SANGs within the Shinfield West development. Annual costs for running the SANG will include a proportion of the Ranger time, agricultural management and maintenance of facilities.
- 8.5 As with Langley Mead SANG, the University of Reading will provide for the ongoing management requirements of the SANG through a ring-fenced sum held within its accounts, appropriate proportions of which it will recover from the proponents of the developments which rely upon SANG provision at the Ridge SANG. Such contributions are to be secured through legal obligations such as Section 106 agreements, with such an agreement already in place for development at Shinfield West and a number of other third party developments, which have been agreed with Wokingham Borough Council.

Management Plan Review

Period of Management Plan

- 8.6 This Management Plan for the Ridge SANG is designed to oversee the setting up of the SANG and to initiate its ongoing management. The Plan is expected to cover a period up to around five years after the SANG is implemented and open to the public. In normal circumstances, the Plan will be reviewed on a rolling programme, most likely a five-year cycle, though this may be brought forward if required to join up with the delivery of the remaining Strategic Greenspace area adjacent to the SANG.

Scope of Review

- 8.7 The first review of the Plan will need to cover:
- Success of initial habitat establishment and ongoing progress toward the target NVC communities;

- Analysis of early visitor use, both of SANG and of the SPA;
- Operational problems and experience;
- The development programme and the incorporation of new SANG areas into the suite of linked SANG;
- The grazing strategy;
- Revenue and costings; and
- An assessment of whether overall management has been effective.

8.8 Much of the information above will routinely be collated by the SANG Ranger, who will be employed and supported by the University of Reading, but specialist information (for example ecological survey information pertaining to the success of habitat establishment) will also be required and if necessary will be secured from external professional ecologists.

8.9 The SANG Ranger will be responsible for the implementation of an annual sequence of management tasks, including:

- Site manning, educational activities and liaison with the public;
- Maintenance of routine accounting procedures and managing to a budget;
- Co-working with ecologists monitoring the SANG to review progress;
- Helping with early habitat establishment, including for example the control of undesirable weedy species;
- Management of the grazing herd of cattle across the SANG;
- Maintaining pathways and other infrastructure;
- Hay-making, baling and storage;
- Equipment maintenance, health and safety considerations; and
- Reporting results

Ecological Monitoring

8.10 Progress toward achieving the broad target botanical community types for each management compartment will be monitoring on an annual basis initially, in addition to gradual increases in diversity, and this information will be fed back into the review of the management plan. The frequency of monitoring visits can however be reduced once the SANG has passed the establishment phase and more settled conditions have prevailed.

8.11 Statistical sampling methods used to establish progress toward the broad target vegetation communities will be developed (at Langley Mead a transect-based quadrat sampling strategy has been designed). The distribution of sampling effort will be determined by habitat types (and variability of sample data) and the numbers of samples required will be determined by the degree of statistical precision required to distinguish differences between groups of results.

8.12 Soil nutrient levels will also be monitored though sampling every five years.

- 8.13 The essential requirement of monitoring will be the standardisation of the sampling regime between years, so that valid long-term comparisons can be made.

Visitor Monitoring

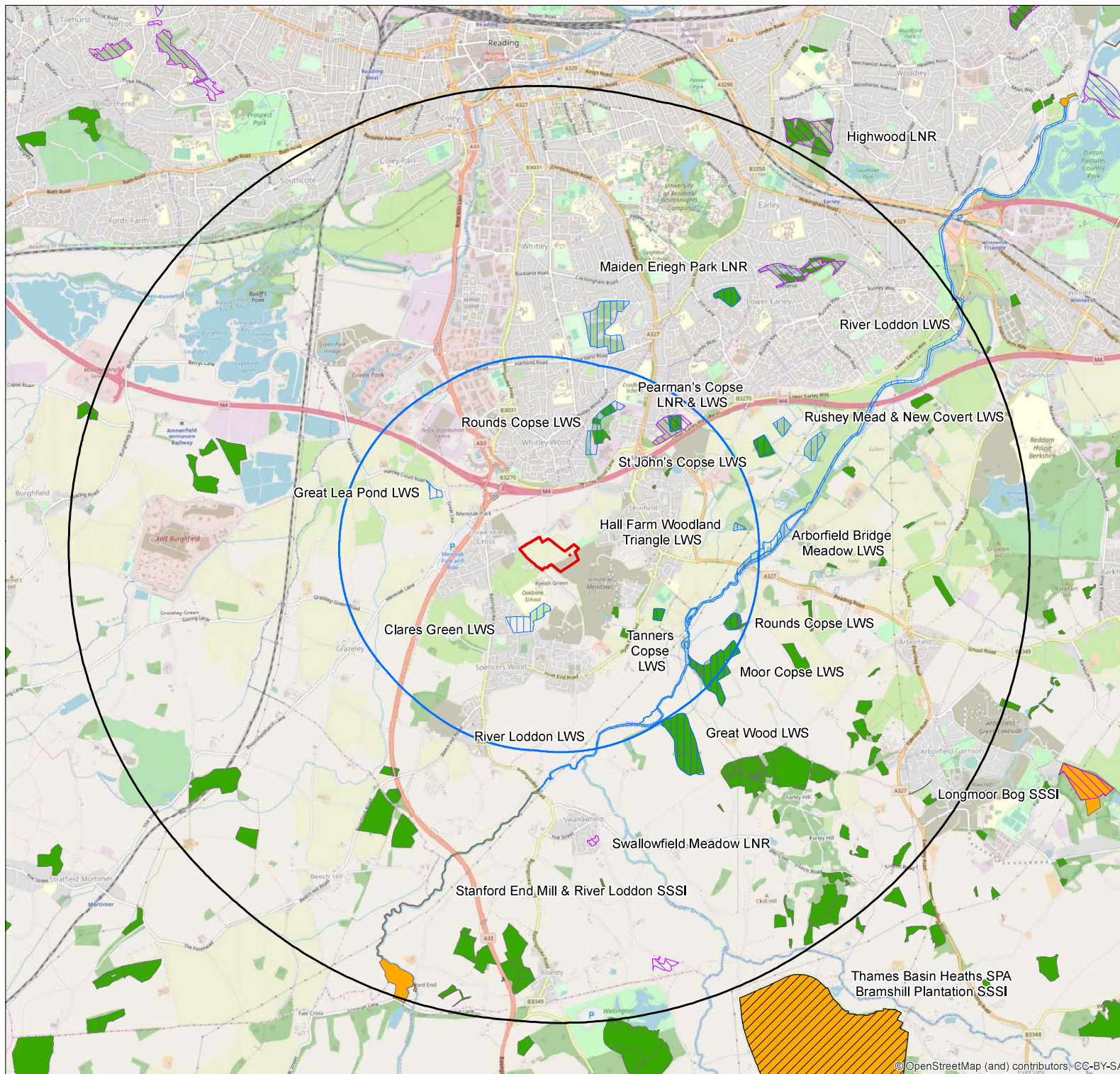
- 8.14 Visitor numbers, origins, purpose and patterns will be monitored annually at the principle access points to the SANG, if possible in conjunction with the annual visitor monitoring that is already taking place at Langley Mead. The method of monitoring (by exit interview questionnaire) has already been agreed with Natural England.
- 8.15 Data collected during visitor monitoring will be fed back into the SANG Management Plan review, and will also be made available to Natural England's Strategic Access Management and Monitoring (SAMM) project.

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Maps

- Map 1** Site Location and Nature Conservation Designations
- Map 2** The Ridge SANG and the SDL
- Map 3** Phase 1 Habitat Map 2010
- Map 4** Extract from the 1756 Earl of Fingall's Manor of Shinfield Map
- Map 5** Extract from the 1st editions 1" and 6" OS Maps



MAP 1 Site Location & Nature Conservation Designations

KEY

- Ridge SANG
- 2km SANG buffer
- 5km SANG buffer
- Special Protection Area (SPA)
- Site of Special Scientific Interest (SSSI)
- Local Nature Reserve (LNR)
- Local Wildlife Site (LWS)
- Ancient Woodland

SCALE: 1:42,000 at A3

0 500 1,000 1,500 2,000 2,500 Metres



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PROJECT: Shinfield West

DATE: March 2019

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P08/75-5C

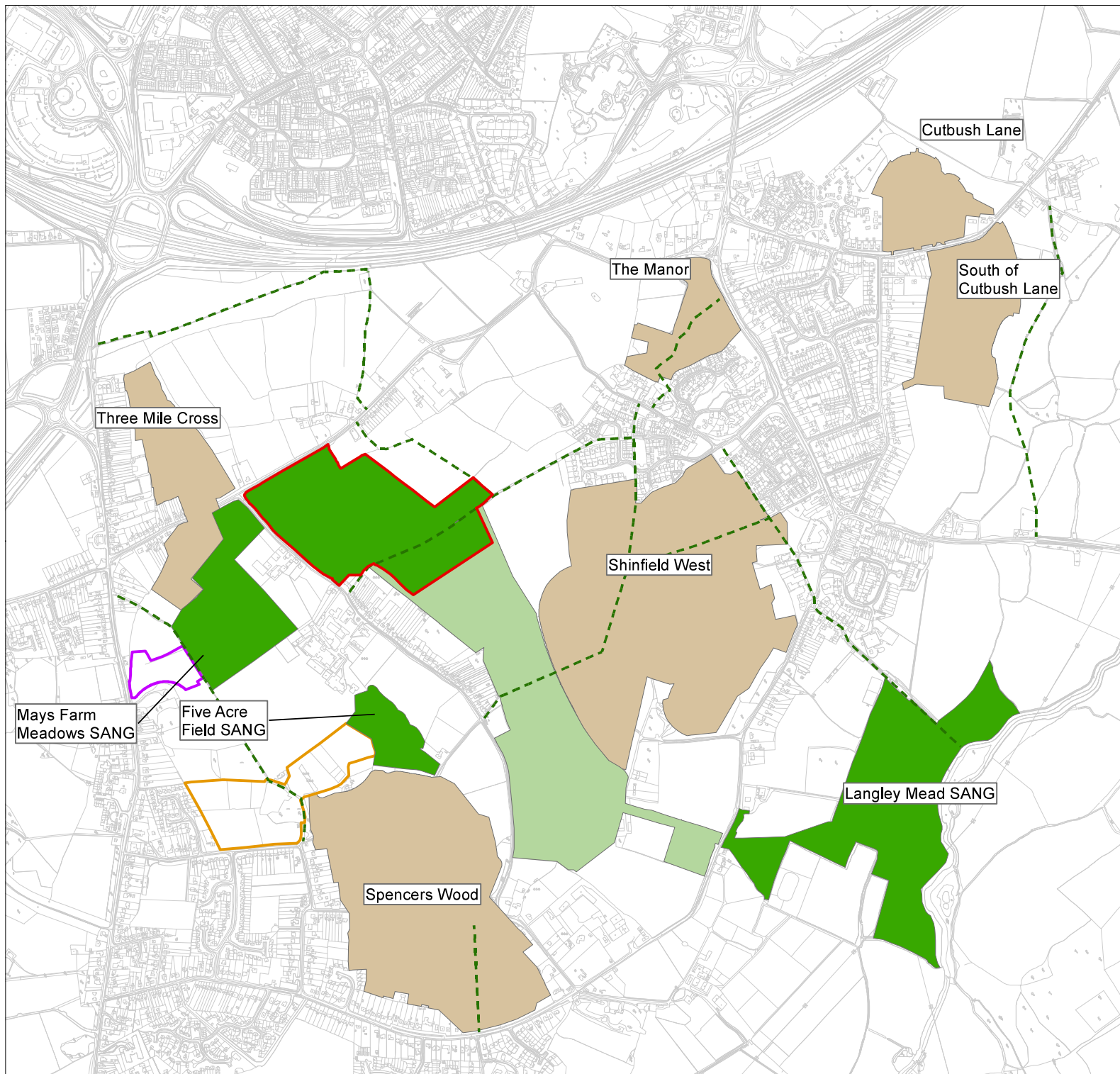
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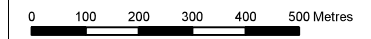
MAP 2 The Ridge SANG and the SDL

KEY

-  Ridge SANG Boundary
-  SDL SANG Suite
-  Strategic Greenspace link
-  SDL Residential Parcels
-  WBC Clares Green SANG
-  Parklands SANG (third party)
-  PROW



SCALE: 1:10,000 at A3



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








CLIENT: University of Reading

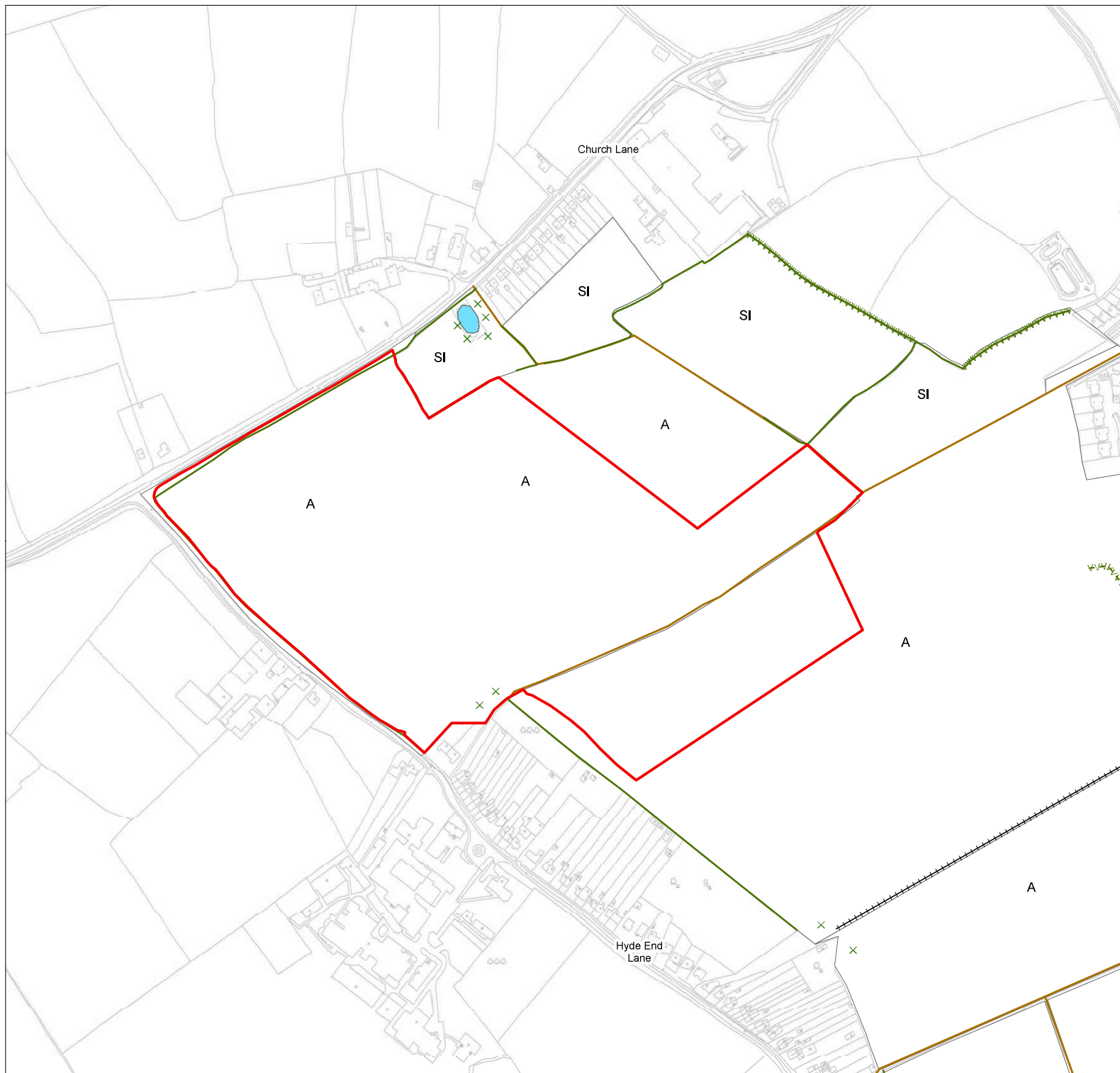
PROJECT: Shinfield West

DATE: March 2019

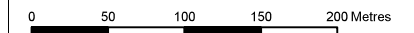
MAP 3 Phase 1 Habitat Map 2010

KEY

-  Ridge SANG boundary
-  Arable
-  Poor semi-improved neutral grassland
-  Standing Water
-  Scattered scrub
-  Fence
-  Track/path
-  Intact species rich hedge with trees
-  Defunct species rich hedge
-  Intact species poor hedge



SCALE: 1:3,500 at A3



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DATE: March 2019

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MAP 5 Extracts from the 1st editions 1" and 6" OS Maps

Left inset: 1817 First Edition OS 1" to 1 mile map
 Right inset: 1883 First Edition OS 6" to 1 mile map





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PROJECT: Shinfield West

DATE: March 2019

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Appendix 1
Landscape Masterplan

The scaling of this drawing cannot be assured

| Revision | Date | Dwn | Ckd |
|----------|----------------------------------|----------|--------|
| A | Grassland updated | 20.03.19 | CH MY |
| B | Updated to KJ email | 07.05.19 | AFS MY |
| C | Breaks in hedgerows incorporated | 08.05.19 | AFS MY |

- LEGEND**
- Ridge SANG boundary
 - Tree Planting
 - Existing Hedge Retained
 - Translocated Hedgerow
 - Proposed Native Hedgerow
 - Scrub Planting
 - Species Rich Neutral Grassland within SANG
 - Lowland Dry Acid Grassland within SANG
 - Species Rich Neutral Grassland within High Cope Common (Strategic Greenspace)
 - Gravel path with timber edge
 - Indicative Mown path
 - Stock & Dog Proof Fencing
 - Cattle Proof Fencing
 - Post and Rail Fence
 - Temporary Deer Proof Fencing
 - Cattle guard
 - Kissing Gate
 - Field Gate
 - Pedestrian Gate
 - Interpretation Sign/ Waymarker
 - Seating
 - Litter Bin / Dog Bin
 - Cattle Trough on concrete base
 - Log Piles/ Hibernacula
 - Public Right of Way



PLANTING SCHEDULE

TREE PLANTING

| ABBV. | SPECIES | COMMON NAME | HEIGHT (cm) | TYPE/SIZE (cm) |
|-------|--------------------|-------------|-------------|---|
| Ac | Acer campestre | Field Maple | 350-400cm | HS, 12-14cm girth (BR), 3x, min 2m clear stem |
| Ca | Corylus avellana | Hazel | 350-400cm | HS, 12-14cm girth (BR), 3x, min 2m clear stem |
| Eu | Euonymus europaeus | Hawthorn | 350-400cm | HS, 12-14cm girth (BR), 3x, min 2m clear stem |
| Qr | Quercus robur | Oak | 350-400cm | HS, 12-14cm girth (BR), 3x, min 2m clear stem |

NATIVE HEDGEROW PLANTING MIX

| ABBV | SPECIES | % | COMMON NAME | TYPE/SIZE (cm) | CENTRES (mm) |
|-------|-----------------------|-----|-------------|------------------|---------------|
| Co av | Corylus avellana | 30% | Hazel | T1+1, 40-60cm,br | 300 (7 per m) |
| Co mo | Crataegus monogyna | 30% | Hawthorn | T1+1, 40-60cm,br | 300 |
| Eu eu | Euonymus europaeus | 5% | Spindle | T1+1, 40-60cm,br | 300 |
| Il aq | Ilex aquifolium | 5% | Holly | CG, 2L | 300 |
| Lo pe | Lonicera periclymenum | 5% | Honeysuckle | T1+1, 40-60cm,br | 300 |
| Ma sy | Malus sylvestris | 5% | Crab Apple | T1+1, 40-60cm,br | 300 |
| Pr do | Prunus domestica | 5% | Damson | T1+1, 40-60cm,br | 300 |
| Pr sp | Prunus spinosa | 10% | Blackthorn | T1+1, 40-60cm,br | 300 |
| Ro ca | Rosa canina | 5% | Dog Rose | T1+1, 40-60cm,br | 300 |

SCRUB PLANTING MIX

| ABBV | SPECIES | % | COMMON NAME | TYPE/SIZE (cm) | CENTRES (mm) |
|-------|-----------------------|-----|-------------|-------------------|--------------|
| Co av | Corylus avellana | 30% | Hazel | T1+1, 40-60cm,br | 1500 |
| Cr mo | Crataegus monogyna | 30% | Hawthorn | T1+1, 40-60cm,br | 1500 |
| Eu eu | Euonymus europaeus | 5% | Spindle | T1+1, 40-60cm, br | 1500 |
| Il aq | Ilex aquifolium | 5% | Holly | 2L, 40-60cm, CG | 1500 |
| Lo pe | Lonicera periclymenum | 5% | Honeysuckle | T1+1, 40-60cm, br | 1500 |
| Ma sy | Malus sylvestris | 5% | Crab apple | T1+1, 40-60cm, br | 1500 |
| Pr do | Prunus domestica | 5% | Damson | T1+1, 40-60cm, br | 1500 |
| Pr sp | Prunus spinosa | 10% | Blackthorn | T1+1, 40-60cm, br | 1500 |
| Ro ca | Rosa canina | 5% | Dog rose | T1+1, 40-60cm, br | 1500 |

PLANTING NOTE: Planted at 1.5m centres on a grid in single species groups of 3-5.

GRASSLAND SEEDING

Emorsgate EM4 Meadow Mixture for Clay (4g per m2/ 40kg per ha)

PLANTING NOTE 1: Hedgerow to be planted in a double staggered row, rows 250mm apart, at 300mm centres therefore 7 plants per linear meter.

INFORMATION

Project: University of Reading South of M4

Drawing Title: Ridge SANG Landscape Masterplan

| | | | |
|-------------------|----------------------|--------------|--------------|
| Date: 15.03.19 | Scale: 1:1,000@A1 | Drawn by: CH | Check by: MY |
| Project No: 24262 | Drawing No: RG-L-316 | Revision: C | |

DRAFT WILLMORE

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Appendix 2

How the SANG Meets Natural England's SANG Requirements

The table below is based on Natural England's 'Guidelines for the creation of Suitable Accessible Natural Greenspace (SANGS) version dated 12.06.08. In some cases the listed features are provided in conjunction with other SANG areas in the wider SDL SANG suite.

Table A2.1: How the Ridge SANG meets NE's SANG Requirements

| SANGS Requirement | How the Ridge SANG meets this requirement |
|---|---|
| 'Must Have' SANG Features | |
| For SANGS larger than 4ha there must be adequate parking unless the site is intended for local use, i.e. within easy walking distance. | A car park with 10 spaces to serve future users of the Ridge SANG has been created on Hyde End Lane. The SANG walking catchment extends well into proposed development areas at Shinfield West, and pedestrian access from here, and further into the wider SDL will be facilitated through footpaths, including a pedestrian crossing over Hyde End Lane to May's Farm Meadows SANG. |
| It should be possible to complete a circular walk of 2.3-2.5km around the SANGS | Circular walks of up to 2.5km will be available through the Ridge SANG, and across the two pedestrian crossings that have already been provided over Hyde End Lane to link with May's Farm Meadows SANG. An additional 2.5 km circular walk is also available at the Langley Mead SANG, which can be accessed via the connecting Strategic Greenspace. |
| Car parks must be easily and safely accessible by car and clearly signposted | This has been taken into account in the design of the car park. |
| The SANGS must include access points appropriate for the particular visitor use for which it is intended | Access points have been arranged to cater for visitors arriving by foot or by car as described above. Waymarkers and interpretation material will also be present. |
| The SANGS must have a safe route of access on foot from the nearest car park and/or footpaths | The car park on Hyde End Lane is within the Ridge SANG and directly connected through safe footpaths. An additional car park for 10 spaces will also be available within the SDL SANG scheme at Langley Mead SANG. |
| All SANGS with car parks must have a circular walk which starts and finishes at the car park | See above. |
| SANGS must be designed so that they are perceived to be safe for users; they must not have tree and scrub cover along parts of the walking routes | The majority of the footpath walks within the Ridge SANG will benefit from clear views across open areas of the SANG. Most paths run along the edges of areas of trees, scrub or hedges, with open views on the opposite side. |
| Paths should be easily used and well maintained but most should be unsurfaced to avoid urban feel | The majority of paths will be hoggin, bound gravel or simple mown paths through grassland areas. A macadam surfaced path runs across the crest of the Ridge; this cannot be seen from the rest of the SANG. |

| SANGS Requirement | How the Ridge SANG meets this requirement |
|--|---|
| SANGS must be perceived as semi-natural spaces with little intrusion of artificial structures, except in vicinity of car parks. Visually sensitive way markers and benches are acceptable | As set out above, path surfacing, way markers and interpretation boards will be of a rustic timber design to avoid the feeling of artificial intrusion. The potential influence of nearby wind farm proposals is addressed both in the Shinfield West and South of the M4 SDL Thames Basin Heaths SPA Impact Avoidance and Mitigation Strategies. |
| All SANGS larger than 12ha must aim to provide a variety of habitats | The Ridge SANG includes open grassy slopes, acid grassland, species-rich neutral grassland, ponds and pockets of woodland. |
| Access within SANGS must be largely unrestricted with plenty of space provided where it is possible for dogs to exercise freely and safely off the lead | A significant proportion of the SANG will be available to enable dogs to be exercised off of the lead at any one time. Management will involve low intensity rotational grazing, ensuring that at any one time the majority of the SANG will be available for dogs to be exercised. |
| SANGS must be free from unpleasant intrusions (e.g. sewage treatment works) | No such unpleasant intrusion is known to exist in the vicinity of the SANG. |
| SANGS should be clearly sign-posted or advertised in some way | The SANG will be advertised locally through leaflet drops to existing and new residents of the area, including at Land South of Cutbush Lane. All major access points and the car park at Hyde End Lane will benefit from larger interpretation boards that will include a map of the site. The possibility of road signs will also be investigated. It is envisaged that the ongoing management of the SANG will also continually seek to publicise the availability of the recreational resource to local people. |
| SANGS should have leaflets and/or websites advertising their location to potential users. It would be desirable for leaflets to be distributed to new homes in the area and be made available at entrance points and car parks | A website already exists for Langley Mead SANG, and it is proposed that this will be extended to include details for the Ridge SANG. Further details of the wider network of green open space and SANG suite are also posted on the South of the M4 SDL Consortium's website, and will be included in welcome packs for new residents. |
| 'Desirable' SANG Features | |
| It would be desirable for an owner to be able to take dogs from the car park to the SANGS safely off the lead | This will be made possible as the car park is contained within the Ridge SANG and connected by a footpath. |
| Where possible it is desirable to choose sites with a gently undulating topography for SANGS | The Ridge SANG benefits from a large area of gently sloping raised ground with a ridge-top walk offering views to the north and south. |
| It is desirable for access points to have signage outlining the layout of the SANGS and routes available to visitors | This has been achieved – interpretation boards and/or way markers will be present throughout the SANGS, including at access points and the car park. |

| SANGS Requirement | How the Ridge SANG meets this requirement |
|--|---|
| <p>It is desirable that SANGS provide a naturalistic space with areas of open (non-wooded) countryside and areas of dense and scattered trees and shrubs. The provision of open water on part, but not the majority of SANGS is desirable.</p> | <p>The majority of the Ridge SANG areas will support open expanses of diverse grassland bordered by trees, scrub and hedgerows, with an area of acid grassland creation on top of the ridge itself. There will also be a small area of wetland creation.</p> <p>Other varied habitats will be provided elsewhere in the SANG scheme, including at the Langley Mead SANG, as described in the management plan for that area.</p> |
| <p>It is desirable to have a focal point such as a view point, monument etc within the SANGS.</p> | <p>A pathway and viewpoint will be provided on top of the ridge itself, looking either north towards Greenpark and Reading, or south over the Loddon Valley. Interpretation material and varied landscape features will help attract users to certain points in the SANG, and open views of the landscape will be available.</p> |